

DOCUMENT RESUME

ED 062 211

SE 013 739

AUTHOR Garfinkle, Gary; Miller, Charlette
TITLE Authorized Course of Instruction for the Quinmester
Program. Science: Design for Living.
INSTITUTION Dade County Public Schools, Miami, Fla.
PUB DATE 71
NOTE 18p.

EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Bibliographies; Films; *Health Education;
Instruction; *Nutrition; *Objectives; *Teaching
Guides; Units of Study (Subject Fields)
IDENTIFIERS *Quinmester Program

ABSTRACT

Performance objectives are stated for this health education unit prepared for the Dade County Florida Quinmester Program. The booklet contains an overview of the content of the unit devoted to nutrition and exercise which is intended for secondary school students, lists of suggested teaching activities found in texts and teacher sourcebooks, discussion questions, possible student projects, and visual aids available from the county and other sources. Suggestions for the organization of teaching within the quinmester are made, and a summary chart relates the suggested activities to the stated objectives. (AL)

ED 062211

SE
N-LJ

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIG-
INATING IT. POINTS OF VIEW OR OPIN-
IONS STATED DO NOT NECESSARILY
REPRESENT OFFICIAL OFFICE OF EDU-
CATION POSITION OR POLICY

AUTHORIZED COURSE OF INSTRUCTION FOR THE **QUINMESTER PROGRAM**

SCIENCE: DESIGN FOR LIVING 5311.21
5312.21
5313.21

DADE COUNTY PUBLIC SCHOOLS

DIVISION OF INSTRUCTION • 1971

SE 013 739

DESIGN FOR LIVING

5311.21

5312.21

5313.21

SCIENCE

(experimental)

Written By Gary Garfinkle and Charlette Miller
for the

DIVISION OF INSTRUCTION
Dade County Public Schools
Miami, Florida

1971

DADE COUNTY SCHOOL BOARD

Mr. William Lehman, Chairman
Mr. G. Holmes Braddock, Vice-Chairman
Mrs. Ethal Beckham
Mrs. Crutcher Harrison
Mrs. Anna Brenner Meyers
Dr. Ben Sheppard
Mr. William H. Turner

Dr. E. L. Whigham, Superintendent of Schools
Dade County Public Schools
Miami, Florida 33132

Published by the Dade County School Board

Copies of this publication may be obtained through

Textbook Services
2210 S.W. Third Street
Miami, Florida 33135

Price: \$.75

TABLE OF CONTENTS

	<u>page</u>
Course Description	1
Enrollment Guidelines.	1
State Adopted Texts.	1
Performance Objectives	2
Course Outline	3
Experiments.	4
Projects	6
Reports.	7
Field Trips.	8
Films.	9
Film Loops	10
Film Strips.	10
Records.	10
Discussion Questions	11
Suggested Course Format.	11
References	12
Master Sheet	14

DESIGN FOR LIVING

COURSE DESCRIPTION

A survey course in which the student will learn how to maintain a healthy body through investigating proper nutritional practices and through proper use of exercise.

ENROLLMENT GUIDELINES

NONE

STATE ADOPTED TEXTS

1. Brandwein, Paul, and others. Life-Its Forms and Changes.
New York: Harcourt, Brace, and World, Inc., 1968.
2. Oxenhorn, John M. and Edelson, Myron. Pathways in Science. 1 Biology.
New York: Globe Book Co., 1968.
3. Thurber, Walter A. and Kilburn, Robert E. Exploring Life Science.
Boston: Allyn and Bacon, 1967.

PERFORMANCE OBJECTIVES

1. Given the major structures of the digestive system, the student will identify the function of each.
2. Given a variety of foods, the student will classify each according to the basic types.
3. The student will distinguish the metabolism of fats, carbohydrates and proteins.
4. Given certain conditions, the student will devise a method to compare starch and sugar.
5. The student will describe the functions of the principal vitamins and minerals.
6. The student, given a list of deficiency diseases, will suggest means to correct the deficiency involved.
7. The student will discuss critically the practice of using food additives.
8. The student will propose a number of reasons for the value of exercise in maintaining a healthy body.
9. The student will differentiate the diet controls for conditions of overweight and underweight.
10. The student will identify the exercise processes necessary to achieve and maintain proper weight.
11. The student will describe and perform a number of exercises for isometrics, yoga, calisthenics and aerobatics.

COURSE OUTLINE

I. Food and Nutrition

A. Digestive system

1. Structures
2. Functions

B. Metabolism and foods

1. Fats
 - a. Types
 - b. Metabolism
2. Carbohydrates
 - a. Types
 - b. Metabolism
3. Proteins
 - a. Types
 - b. Metabolism
4. Vitamins and minerals
 - a. Types
 - b. Functions

C. Deficiency diseases

D. Food additives

II. Body Maintenance

A. Exercise

B. Weight maintenance

1. Overweight
 - a. Diet control
 - b. Exercise
2. Underweight
 - a. Diet control
 - b. Weight training

C. Modern approach to exercise

1. Isometrics
2. Yoga
3. Aerobatics
4. Calisthenics

III. New Nutritional Theories

EXPERIMENTS

Beauchamp, W. L., and Hurd, P. Science Is Explaining.
Glenview, Illinois: Scott, Foresman, and Co., 1963.

1. How does saliva help digest starch? p.185.
2. How can you test foods for some sugar? p.182.
3. How can you test foods for fats? p.187.
4. How can you test foods for proteins? p.188.
5. How can you test foods for minerals? p.189.

Brandwein, P. F., Beck, A. D., Strahler, V., Hollingworth, L. G.,
Brennan, M. J., The World of Living Things.
New York: Harcourt, Brace and World, Inc., 1964.

6. Heat energy in foods. p.301.
7. Digestion in the mouth. p.307.
8. Digestion in the stomach. p.308.
9. Effect of saliva on starch. p.319.
10. Test for simple sugar. p.52.
11. Test for fats. p.52.

Brandwein, P., Burnett, R., Stollber, R. Life-Its Forms and Changes.
New York: Harcourt, Brace, and World, Inc., 1968.

12. Importance of starch digestion. p.113.
13. Minerals in the body. p.183.

MacCracken, H., Decker, D., Read, J., and Yarian, A.
Scientists Solve Problems. Syracuse: R. W. Singer Co., 1966.

14. How do enzymes change the protein in gelatin? p.55.

Mason and Peters, Life Science-A Modern Course.
Princeton: D. Van Nostrand Co., 1965.

15. Test for starch. p.158.
16. Test for simple sugar. p.158.
17. Test for fat. p.158.
18. Test for protein. p.159.
19. Action of certain enzymes. p.170.

Oxenhorn and Edelson, The Materials of Life. Pathways in Science.
1 Biology. New York: Globe Book Co., 1968.

20. Is it starch? p.142.
21. Is it sugar? p.143.
22. Is it protein? p.143.
23. Is it fat? p.144.
24. Is it mineral? p.144.
25. Is it Vitamin C? p.145.
26. Does food contain water? p.145.

EXPERIMENTS (continued)

Science Lab: 7 and 8. Miami: Dade County Board of Public Instruction.

- 27. Food tests. p.118.
- 28. Food and energy. p.120.
- 29. Energy and living things. p.123.
- 30. Digestion of starch, Part I. p.125.
- 31. Digestion of starch, Part II. p.127.
- 32. Digestion of carbohydrates. p.128.

Thurber and Kilburn. Exploring Life Science.
Boston: Allyn and Bacon, 1967.

- 33. A test for sugar. p.149.
- 34. Starch. p.152.
- 35. Test for fats and oils. p.156.
- 36. Energy of a nutmeat. p.157.
- 37. A test for protein. p.160.
- 38. Extracting carotene. p.165.
- 39. Experimental activities on food. p.172.

PROJECTS

1. Collect labels from bread wrappers, cereal boxes, and other empty food containers. What information is given on the labels?
2. Make a chart listing the important vitamins. In one column list several sources of each vitamin, and in another column the importance of each vitamin to the body.
3. Collect sample menus for a week or month from a newspaper or magazine. Determine whether or not each suggested menu represents a well-balanced diet. Suggest specific improvements when needed.
4. Make posters suitable for display illustrating balanced diets or the Basic Four food groups.
5. Collect a series of diets for weight reducing. Determine the number of calories per day for each diet. List the foods which are high in caloric value and those that are low. Make up your own sample diet which will be well balanced but low in calories.
6. Make a poster illustrating the various types of exercises that can be performed with weights. Illustrate the poster with stick drawings.
7. Design your own exercise program which would take no more than ten minutes per day to perform but which would include sufficient exercise to all the major muscles of the body. Describe the exercises, the number of repetitions to be performed and illustrate the exercises with color snapshots of yourself performing the exercise.

REPORTS

1. Find out what is meant by basal metabolism. Report on methods of measurement.
2. Make a report comparing correct and incorrect ways of preparing different foods.
3. Investigate the production of oleomargarine and report on the sources of fats and oils used in the process.
4. Report on Dr. Eijkman's experiments that led to Vitamin B discovery.
5. Make a report about food fads and the dangers involved.
6. Food superstitions - Many people have superstitious beliefs about food, such as the belief that fish is a brain food. Make a list of several of these superstitions and explain how they may have started.
7. Examine labels on packaged foods to find out what preservatives have been added. Report on the pros and cons of various types of preservatives.
8. Find out what scurvy is, and why British sailors are sometimes called "limeys".
9. Report on work of Lazzaro Spallanzani or William Beaumont, two scientists who investigated the function of gastric juice.
10. Report on the process of yoga. Tell about its history and its philosophy.
11. Make a report about the new ideas and new trends in exercise. List as many as you can and tell about each.
12. Report on articles from the newspapers and magazines which give information about new nutritional theories which are subscribed to by vegetarians, health fadists and others.

FIELD TRIPS

1. Visit school cafeteria. Ask the dietitian to explain how she plans and prepares nutritious meals that are inexpensive and easy to prepare in large quantities.
2. Visit a cannery, dairy, or other food processing plant to find out how food is handled and processed. Make note of the attempts to maintain sanitary conditions.
3. Visit a local health spa or exercise club or gym. Make note of the various machines and apparatus used to perform exercise. Ask the proprietor to allow you to try the equipment and to prescribe a sample exercise routine.

FILMS AVAILABLE FROM DADE COUNTY AUDIOVISUAL CENTER

1. Alimentary Tract
AV #1-03113, 11 min. BW
2. Balance Your Diet for Health and Appearance
AV #1-03943, 10 min. C
3. Body Builders
AV #1-05435, 13 1/2 min. C
4. Digestion: Chemical
AV #1-11235
5. Digestion in Our Bodies
AV #1-03121, 10 min. BW
6. Digestion of Foods
AV #1-03115, 10 min. BW
7. Human Body: The Digestive System
AV #1-11240, 13 1/2 min. C
8. Human Body: The Nutrition and Metabolism
AV #1-11244, 14 min. C
9. Nutritional Needs of Our Body
AV #1-02318, 11 min. C
10. Posture and Exercise
AV #1-03224, 11 min. BW
11. Something You Didn't Eat
AV #1-03940, 10 min. C
12. Understanding Vitamins
AV #1-11287, 14 min. BW

FILMS AVAILABLE FROM OTHER SOURCES

13. Food for the Body
Time Life Films, 20 min. C
14. The Human Body: The Chemistry of Digestion
Coronet Films, 13 min. C

FILM LOOPS

1. Digestion: Chemical Change
Universal Education and Visual Arts. 2 min. 50 sec.
2. Weight Training
Set of five loops. Stanley Bomar Co. LRS 505X.

FILM STRIPS

1. Digestion of Foods
Encyclopedia Britannica, BW, 86 Frames
2. The Digestive System
McGraw-Hill, C
3. Food and Nutrition Series
McGraw-Hill, 5 film strips in series, C
4. How Vitamins Help Man
McGraw-Hill, C
5. Testing Foods and Nutrients
McGraw-Hill, 47 frames, C
6. Safeguarding Our Food
McGraw-Hill, C
7. Activities For Physical Fitness
Eye Gate, set of six film strips, C
8. What is Digestion?
McGraw-Hill, 45 frames, C

RECORDS

1. And The Beat Goes On For P.E.
Learning Arts, 2 records.
2. Body Conditioning For Teens And Adults
Learning Arts, 1 record.

SUGGESTED DISCUSSION QUESTIONS

1. What are the units for building carbohydrates? fats? proteins?
2. What are the end products of carbohydrate digestion? of fat digestion? of protein digestion?
3. How does digested food get into the blood stream?
4. What changes take place in milk as it travels down the digestive system?
5. The small intestine of an adult forms a 26 foot tube. How does this length aid in the digestion of food?
6. What is meant by the statement, "a healthy body and a healthy mind?"
7. Why is it unhealthy to exercise after eating?
8. What are the pros and cons of insecticide sprays and food additives?
9. What are some of the recent discoveries pertaining to Vitamin C?

SUGGESTED QUINMESTER FORMAT

It is suggested that this quinmester course be conducted so that students have an opportunity for book work, laboratory work and actual performance of exercise. One day each week should be devoted to learning and performing exercise routines, one or two days each week to laboratory work and the remainder to text work, library work, discussions, etc.

At the beginning of the quinmester each student should be tested to determine his physical fitness quotient. Any standardized fitness test can be used. Tests can be found in physical education test and measurements books. The student should be retested at the end of the quinmester course with the goal in mind that there will be an improvement.

REFERENCES

1. Beauchamp, William L. and others. Science Is Explaining. Glenview, Illinois: Scott, Foresman and Co., 1963.
2. Brandwein, Paul F. and others. The World of Living Things. New York: Harcourt, Brace and World, Inc., 1964.
3. Brandwein, Paul F. and others. Life-Its Forms and Changes. New York: Harcourt, Brace and World, Inc., 1968.
4. Cassan, Christiane. The Teen Ager's Guide to Diet and Health. Englewood Cliffs, New Jersey: Prentice Hall, 1964.
5. Cureton, Thomas K. Physical Fitness and Dynamic Health. New York: Dial Press, 1965.
6. Diskin, Eve. Yoga. Miami: American Institute of Yoga, 1970.
7. Diskin, Eve. Yoga Nutrition. Miami: American Institute of Yoga, 1970.
8. Duggan, Anne S. and others. Conditioning Exercises for Girls and Women. New York: Ronald Press Co., 1945.
9. Fait, Hollis F. Health and Fitness for Modern Living. Boston: Allyn and Bacon, Inc., 1961.
10. Giles, Frank. Toughen Up. New York: G. P. Putnam's Sons, 1963.
11. Hellcourt, William. Physical Fitness for Girls. New York: Golden Press, 1967.
12. Jacobs, Helen H. Better Physical Fitness for Girls. New York: Dodd, Mead and Co., 1964.
13. Kirkly, George. Weightlifting and Training. New York: Arc Books, 1969.
14. Lehman, Edwin. Easy Ways to Keep Healthy. New York: Exposition Press, 1963.
15. MacCracker, Harold and others. Scientists Solve Problems. Syracuse: R. W. Singer Co., 1966.
16. Mason, Robert and James Peters. Life Science-A Modern Course. Princeton: D. Van Nostrand Co., 1965.

REFERENCES (continued)

17. Oxenhorn, James M. and Edelson, Myron. The Materials of Life. Pathways in Science. 1 Biology. New York: Globe Book Co., 1968.
18. Tarmes, Jean. The Girls Book of Physical Fitness. New York: Associated Press, 1961.
- Time Life Books:
19. The Body. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1964.
20. The Cell. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1964.
21. Drugs. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1967.
22. The Engineer. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1966.
23. Food and Nutrition. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1967.
24. Giant Molecules. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1966.
25. Growth. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1965.
26. Health and Disease. Edited by Norman P. Ross. Morristown, New Jersey: Silver Burdett Co., 1965.
27. Thurber, Walter A. and Kilburn, Robert. Exploring Life Science. Boston: Allyn and Bacon, 1967.
28. Varmes, Hal G. The Boys Book of Physical Fitness. New York: Associated Press, 1961.
29. Walsh, John. The First Book of Physical Fitness. New York: Franklin Watts Inc., 1961.
30. Wilson, Charles C. and Wilson, Elizabeth Avery. Health, Fitness and Safety. New York: Bobbs Merrill Co. Inc., 1961.

MASTER SHEET - DESIGN FOR LIVING

Objectives	Experiments	Texts	References	Films	Film Strips	Film Loops	Projects	Reports	Field Trips	Discussion Questions
1	7, 8	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 15, 16, 17, 19, 20, 23, 26, 27	1, 4, 7	1, 2, 8	1				3, 5
2	1, 2, 3, 4, 5, 10, 11, 15, 16, 17, 18, 20, 21, 22, 23, 24, 27	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 15, 16, 17, 19, 20, 23, 26, 27	2, 4, 3, 5, 6, 7, 8, 9, 13	3, 5	2	3, 4, 5		1	
3	7, 8, 9, 12, 19, 30, 31, 32, 36	1, 2, 3, 4, 5, 6, 7	4, 23	5, 6, 7, 8, 12, 14	4, 1, 8	1		1, 9		1, 2
4	2, 3, 9, 12, 15, 16, 20, 21, 27, 33, 34	1, 2, 3, 4, 5, 6, 7	4, 23	5, 6, 7, 8, 12, 14	4, 1, 8			9		
5	5, 13, 14, 19, 24, 25, 26	1, 2, 3, 4, 5, 6, 7	4, 24, 25, 26, 23, 19	3, 8, 9, 11, 12, 13	3, 4		2	4		
6			4, 23, 25, 26, 19	2, 3, 9, 11, 13	4, 3		2	4, 8		
7	23, 26, 21		4, 19, 23, 25, 26	3			1	2, 5, 7, 12	2	8
8			5, 6, 8, 9, 10, 11, 13, 14, 25, 18, 28, 29, 30	10	7		6, 7	11	3	6, 7
9			4, 7, 23, 25, 30	13, 9	3		3, 4, 5	12, 5		
10			4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 25, 26, 27, 28, 29	10	7	2	6, 7	11, 10	3	7
11			4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 25, 26, 27, 28, 29	10	7	2	6, 7	11, 10	3,	7